

MEG-00-012

IN THE CLAIMS

Please amend the Claims as follows.

Please cancel Claims 1-5 and 7-10.

11. (AMENDED) A method of forming a chip scale package (CSP) comprising the steps of:

providing one or more chips having I/O pads with UBM layer on the surface of said I/O pads;

5 providing a substrate comprising bismaleimide triazine (BT) and having a thickness between about 150 to 300 μm ;

applying an adhesive layer with a thickness between about 10 to 100 μm over said substrate, thus forming an adsubstrate composite;

forming openings in said adsubstrate composite to match the spacing of
10 corresponding said I/O pads of said chip;

attaching said chip(s) on said adsubstrate composite wherein said I/O pads of said chip(s) are placed on the corresponding openings on said adsubstrate composite to form a package;

forming a molding material around said package;

15 performing ball mounting over said openings on said adsubstrate of said package;

and

sawing said substrate to form said CSP.

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Please cancel Claim 14.

26. (AMENDED) A method of forming a chip scale package (CSP) comprising the steps of:

providing a wafer having a plurality of chip sites with I/O pads;

forming an under-ball metal (UBM) layer over said I/O pads;

5 forming an adhesive layer over said UBM layer on said wafer to form an adwafer;

forming openings in said adhesive layer on said adwafer to reach said I/O pads

underlying said UBM layer;

thereafter die sawing said adwafer to form said chip scale package (CSP)

providing a substrate having openings corresponding to said I/O pads;

10 thereafter attaching said CSP with said adhesive to said substrate; and

thereafter forming ball mountings on said openings on said substrate to attach to

said I/O pads on said CSP.

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Please add the following new Claims:

42. A method of forming a chip scale package (CSP) comprising the steps of:

- providing one or more chips having I/O pads with UBM layer on the surface of said I/O pads;
- providing a substrate comprising bismaleimide triazine (BT) and having a thickness between 150 to 300 μm ;
- applying an adhesive layer with a thickness between 10 to 100 μm over said substrate, thus forming an adsubstrate composite;
- forming openings in said adsubstrate composite to match the spacing of corresponding said I/O pads of said chip;
- attaching said chip(s) on said adsubstrate composite wherein said I/O pads of said chip(s) are placed on the corresponding openings on said adsubstrate composite to form a package wherein said attaching is accomplished by subjecting said adsubstrate to a temperature of between 250 and 350 $^{\circ}\text{C}$ at a pressure of between 1.5 to 2.5 Mpascals;
- forming a molding material around said package;
- thereafter performing ball mounting over said openings on said adsubstrate of said package; and
- sawing said substrate to form said CSP.

43. The method of claim 42 wherein said chip comprises silicon.

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44. The method of claim 42 wherein said I/O pads are area array (AA) type, or are redistributed to a redistribution layer to form AA I/O pads.
45. The method of claim 42 wherein said substrate comprises Ball Grid Array (BGA).
46. The method of claim 42 wherein said adhesive layer comprises polyimide thermocompression adhesive.
47. The method of claim 42 wherein said forming said openings is accomplished by mechanical or laser drilling or screen printing.
48. The method of claim 42 wherein said openings have a diameter between about 350 and 900 μm .
49. The method of claim 42 wherein said molding material comprises epoxy resin.
50. The method of claim 42 wherein said performing said ball mounting is accomplished with a solder comprising tin-lead or tin-silver alloy.
51. The method of claim 42 wherein said ball mountings have a height between about 300 and 800 μm .